

who shall see these Glasses, how they could be truly wrought to such a Figure, with such a Cavity; & yet more, when they shall hear the Author undertake to excavate other such *Eye-Glasses* to above two inches, and *Object-glasses* of five inches *Diameter*. He hath likewise already begun his *Object-glasses* for the mentioned two *Ocular* ones, of the same Figure of about two inches *Diameter*, which are to be left all open, yet without causing any colours. Of all which 'tis hop'd, that shortly a fuller and more particular accompt will be given.

Monsieur Auzout's Speculations of the Changes, likely to be discovered in the Earth and Moon, by their respective Inhabitants.

This Inquisitive *Philosopher* in a letter of his, lately written to his correspondent in *London*, takes occasion to discourse of his considerations concerning those Changes, mentioned in the *Title*, as followes;

I have (saith he) sometimes thought upon the *Changes*, which 'tis likely, the supposed Inhabitants of the *Moon* might discover in our *Earth*, to see, whither reciprocally I could observe any such in the *Moon*. For example, methinks, that the *Earth* would to the people of the *Moon* appear to have a different face in the several seasons of the year; and to have another appearance in *Winter*, when there is almost nothing green in a very great part of the *Earth*; when there are Countries all covered with snow, others, all covered with water, others, all obscured with Clouds, and that for many weeks together: Another in *Spring*, when the Forests and Fields are green. Another in *Summer*, when whole Fields are yellow &c. Me thinks, I say, that these changes are considerable enough in the force of the reflexions of Light to be observed, since we see so many differences of Lights in the *Moon*. We have *Rivers* considerable enough to be seen, and they enter far enough
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into the Land, and have a breadth capable to be observed. There are *Fluxes* in certain places, that reach into large Countries, enough to make there some apparent change; & in some of our Seas there float sometimes such bulky masses of Ice, that are far greater, than the Objects, which we are assured, we can see in the *Moon*. Again, we cut down whole Forests, and drain Marishes, of an extent large enough to cause a notable alteration: And men have made such works, as have produced Changes great enough to be perceived. In many places also are *Vulcans*, that seem big enough to be distinguish'd, especially in the shadow: And when Fire lights upon Forests of great extent, or upon Towns, it can hardly be doubted, but these Luminous Objects would appear either in an Eclipse of the Earth, or when such parts of the Earth are not illuminated by the Sun. But yet, I know no man, who hath observed such things in the *Moon*; and one may be rationally assured that no *Vulcans* are there, or or that none of them burn at this time. This it is (*so he goes on*) which all Curious men, that have good *Telescopes*, ought well to attend; and I doubt not; but, if we had a very particular *Map* of the *Moon*, as I had designed to make one with a *Topography*, as it were, of all the considerable places therein, that We or our Posterity would find some changes in Her. And if the *Maps* of the *Moon* of *Hevelius*, *Divini*, and *Riccioli*, are exact, I can say, that I have seen there some places considerable enough, where they put parts that are clear, whereas I there see dark ones. 'Tis true that if there be Seas in the *Moon*, it can hardly fall out otherwise, than it doth upon our Earth, where *Alluvium's* are made in some places, and the Sea gains upon the Land in others. I say, if those Spots we see in the *Moon*, are Seas, as most believe them to be; whereas I have many reasons, that make me doubt, whether they be so; of which I shall speak elsewhere. And I have sometimes thought, whether it might not be, that all the Seas of the *Moon*, if there must be Seas, were on the side of the other Hemisphere, and that for this cause it might be that the *Moon* turns not upon its *Axis*, as our Earth,

wherein the Lands and Seas are, as it were, ballanced: That thence also may proceed the non-appearance of any Clouds raised there, or of any Vapors considerable enough to be seen, as there are raised upon this Earth; and that this absence of Vapors is perhaps the cause, that no *Crepuscle* is there, as it seems there is none, my selfe at least not having hitherto been able to discerne any mark thereof: For, me thinks, it is not to be doubted, but that the reputed Citizens of the *Moon* might see our *Crepuscle*, since we see, that the same is without comparison stronger, than the *Light* afforded us by the *Moon*, even when she is full; for, a little after Sun-set, when we receive no more the *first* Light of the *Sun*, the sky is far clearer, than it is in the fairest night of the full *Moon*. Mean while, since we see in the *Moon*, when she is increasing or decreasing, the *Light*, she receives from the *Earth*, we cannot doubt, but that the People of the *Moon* should likewise see in the *Earth* that *Light*, where-with the *Moon* illuminates it, with perhaps the difference, there is betwixt their bigness. Much rather therefore should they see the *Light* of the *Crepuscle*, being, as we have said, incomparably greater. In the mean time we see not any faint *Light* beyond the *Section* of the *Light*, which is every where almost equally strong, and we there distinguish nothing at all, not so much that cleereſt part, which is called *Aristarchus*, or *Porphyrites*, as I have often tryed; although one may there see the *Light*, which the *Earth* sends thither, which is sometimes so strong, that in the *Moon's* decrease I have often distinctly seen all the parts of the *Moon*, that were not enlightened by the *Sun*, together with the difference of the clear parts, and the Spots, so far as to be able to discern them all. The *Shaddows* also of all the *Cavities* of the *Moon* seem to be stronger, than they would be, if there were a *second* *Light*. For, although a far off, the *shaddows* of our Bodies, environed with *Light*, seem to Us almost dark; yet they doe not so appear so much, as the *Shaddows* of the *Moon* doe; and those that are upon the *Edge* of the *Section*,
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should not appear in the like manner. But, I will determine nothing of any of these things. When I shall hereafter have made more frequent Observations of the Moon with my *great Telescopes*, in convenient time, I shall then perhaps learn more of it, than I know at present, at least it will excite the *Curious* to endeavor to make the like Observations; and it may be, others, that I have not thought of.

The Instance of the same Person to Mr. Hook, for communicating his Contrivance of making, with a Glass of a Sphere of 20 or 40 foot diameter, a Telescope drawing several hundred foot; and his offer of recompensing that Secret with another, teaching To measure with a Telescope the Distances of Objects upon the Earth.

In Numb. 4. Of these Papers, pag. 67. Mr. Hook had intimated, that he would shortly discover a way of his, with a *Plano-convex* Glasse of a Sphere of 20. or 40. feet Diameter, without *Veines*, and truly wrought of that Figure, to make a Telescope, that with a single *Eye-glass* should draw 300, 400, yea 1000 feet, without at all altering the Convexity: Monsieur *Auzout* returns this consideration, and offer upon it, which follows:

To perform (*saieth he*) with a lesser *Object-glass* the effect of a great Telescope, we must find out a way to make such an *Object-glass* to receive as many Rayes as one will, without their being sensibly distant from one another; to the end, that by applying to it a stronger *Eye-glass*, there may be still Beams enough to see the Object, and to obliterate the small specks and imperfections of the *Eye-glass*. And if Mr. Hook hath this Invention, I esteem it one of the greatest, that can be found in the matter of Telescopes: If he please to impart it to us, we shall be obliged to him; and
I wish,